OBJECTIVES: Mastectomy and lumpectomy procedures are often carried out using electrocautery; however, clinical evidence has demonstrated that the use of ultrasonic energy may reduce blood loss, seroma formation, wound infection, flap necrosis, hematoma, prolonged axillary drainage and length of stay. In the Canadian healthcare environment hospitals are faced with increasingly restrictive budgets, creating a critical need to demonstrate the cost-effectiveness of new technologies. This study was conducted to determine whether the reduction in complications associated with the use of ultrasonic energy in mastectomy and lumpectomy procedures offsets the increased device costs in a Canadian hospital. **METHODS:** We examined the budget impact of replacing electrocautery devices with ultrasonic energy in a hospital that performs 100 lumpectomies and 100 mastectomies annually. The model incorporates the costs associated with surgery, length of stay (taking into account facility and staff costs) and postoperative complications. The cost data was obtained from the Ontario Case Costing Initiative and case costing from a large Canadian hospital. Patient outcomes data was obtained from pooling published, peer reviewed literature after completing a comprehensive literature review. A multivariate sensitivity analysis was completed to ensure scientific rigour. **RESULTS:** The use of electrocautery in mastectomy and lumpectomy procedures is associated with lower device costs when compared to the use of ultrasonic energy devices. However, mastectomies and lumpectomies completed with ultrasonic energy devices demonstrate reduced operating time, a reduction in length of stay and a reduction in post-operative complications which offsets the increased device costs. The model establishes that replacing electrocautery with ultrasonic devices in a Canadian hospital performing 100 mastectomies and 100 lumpectomies annually would allow for a potential cost avoidance of $171,966. **CONCLUSIONS:** In a Canadian hospital, the use of ultrasonic energy in mastectomy and lumpectomy procedures provides a cost savings when compared to the use of electrocautery.

PMD19

BUDGET IMPACT OF PERCUTANEOUS ENDOVASCULAR ABDOMINAL AORTA ANEURYSM (AAA) REPAIR COMPARED TO STANDARD ENDOVASCULAR REPAIR IN CANADIAN HOSPITALS

Ondrejicka DA, Hazel M
Johnson and Johnson Medical Companies, Markham, ON, Canada

OBJECTIVES: Canadian hospitals spend an estimated $111 million annually on elective AAA repair. Percutaneous endovascular abdominal aortic repair approach (PEVAR) is a new minimally invasive technique that avoids surgical cut down associated with standard endovascular AAA repair (EVAR). Innovations in access devices and low profile stent grafts have enabled the PEVAR approach. According to recent studies, PEVAR may offer substantial efficiency benefits as well as a reduction in post-operative complications and patient pain. The objective of our study was to evaluate the budget impact to a hospital of changing the technique for AAA repair from the EVAR approach to the PEVAR approach. **METHODS:** We examined the budget impact of replacing the EVAR approach with the PEVAR approach in a Canadian hospital that performs 100 endovascular AAA repairs annually. The model incorporates the costs associated with surgery, length of stay and postoperative complications occurring within 30 days. The cost data used in the model was obtained from peer reviewed literature, the Ontario Case Costing Initiative and case costing from a large Canadian hospital. Patient outcomes data was obtained from pooling published prospective studies after completing a comprehensive literature review. A multivariate sensitivity analysis was completed. **RESULTS:** The use of PEVAR in AAA repair is associated with increased access device costs when compared to the EVAR approach. However, AAA repair completed with the PEVAR approach demonstrate reduced operating time, a reduction in length of stay and time in the recovery room and a reduction in post-operative complications which offset the increased device costs. The model establishes that switching to the PEVAR approach in a Canadian hospital performing 100 AAA repairs annually would result in a potential cost avoidance of $245,130. **CONCLUSIONS:** A change in AAA repair technique from EVAR to PEVAR can be a cost-effective solution for Canadian hospitals.

PMD20

SAFETY PEN NEEDLE (SPN) DEVICES IN THE ACTUE CARE SETTING: AN ANALYSIS OF HEALTH RESOURCE UTILIZATION (HRU) IN THE UNITED STATES

DiMario S[1], Smallwood C[2], Chandran A[1], Saltiel-Berzin R[1]
[1]*Becton Dickinson, Franklin Lakes, NJ, USA,* [2]*Becton Dickinson, Mississauga, ON, Canada*

OBJECTIVES: Diabetes (DM) is prevalent among hospitalized patients making insulin administration a regular practice in acute care. Variability in the method of administration leaves room for optimization. A budget impact model was created to evaluate the impact of passive SPN on healthcare worker safety and HRU in the acute care setting. **METHODS:** Model inputs include fixed assumptions of insulin waste and cost, needle stick injury (NSI) rates from safety syringe (SS) and SPN, nursing time, and supply costs. Inputs were obtained from the literature and real-world pilot studies. The model compares 4 scenarios using insulin vial with SS versus using insulin pens with SPN: 1) SS+10mL vial patient supply, 2) SS+10mL vial floor stock, 3) SS+3mL vial patient supply, 4) SS+3mL vial floor stock. **RESULTS:** Using insulin pens with SPN reduced NSIs, decreased nursing time, and increased injection supply cost. Insulin consumption varies based on the scenario and affects economic outcomes. When applying real-world data from a 52-bed pilot study to each scenario, annual cost savings (+) or expenditures (-) from switching to SPN are as follows: 1) +$27,622, 2) -$5,951, 3) +$18,730, 4) -$14,485. **CONCLUSIONS:** The cost of NSI contributes significantly to total HRU in the acute care setting in the US. Benefits of switching to SPN include reducing NSIs and decreasing nursing time needed to prepare an insulin injection. For individual patient supply scenarios (scenarios 1 and 3), switching to SPN can reduce both NSIs and total cost to the institution. It is important to note that although the real-world pilot study results above are not generalizable, the model is adaptable to any institution based on number of beds and yearly insulin consumption. NSI rates may be underestimated, and in these cases, adoption of SPN may have a positive budget impact while improving health care worker safety.

PMD21

AN ASSESSMENT OF THE ECONOMIC IMPACT OF THE ADOPTION OF A NEW MECHANICAL FIXATION DEVICE ALONG WITH A NEW SKIRTED INTRA-PERITONEAL ONLAY MESH (IPOM) ON HOSPITAL COSTS OF OPEN VENTRAL HERNIA REPAIR SURGERIES

Panish JM[1], Chekan E[2], Roy S[1]
[1]*Ethicon, Somerville, NJ, USA,* [2]*Johnson & Johsnon (Ethicon), Cincinnati, OH, USA*

OBJECTIVES: Demonstrating economic value of new products is important for hospitals adoption. The combination of two devices: ETHICON SECURESTRAP® Open Absorbable Strap Fixation Device and ETHICON PHYSIOMESH™ Open Flexible Composite Mesh Device, offers a standardized approach to open IPOM repair of ventral hernia. This analysis assesses the potential economic value of using these devices when compared with other meshes and a hand-sutured fixation approach. **METHODS:** An economic model was developed to evaluate the budget impact to hospitals adopting ETHICON SECURESTRAP™ Open Fixation Device with ETHICON PHYSIOMESH™ Open in ventral hernia repair. A 1- to 3-year time horizon was included in the Excel-based model. An increasing utilization rate for ETHICON SECURESTRAP™ Open (20% - 60%), and ETHICON PHYSIOMESH™ Open (10% - 30%) was assumed over 3-year horizon. Costs of the mechanical fixation device, suture supplies, mesh, OR time, anesthesia time, and potentially avoided surgical site infections were considered. The differences in total costs were calculated. **RESULTS:** Based on the model inputs, a 3-year total potential saving of $240,650 was estimated for 100 annual open ventral hernia surgeries using ETHICON SECURESTRAP™ Open Fixation Device versus suture of various meshes. Over three years, although the use of ETHICON SECURESTRAP™ Open Fixation Device added $54,600 in supplies costs, this was completely offset by potential savings in OR time costs ($167,520), potential reduction in avoided surgical site infection or seroma costs due to shorter operating room time ($126,903), and potential reduction in anesthesia costs ($17,189). Similarly, a savings of $40,108 was expected in the very first year. **CONCLUSIONS:** This analysis represents the first economic evaluation of ETHICON SECURESTRAP™ Open Fixation Device with ETHICON PHYSIOMESH™ Open in open ventral hernia surgery. Adoption of the two devices would likely result in savings for hospitals, driven by shorter procedure time and related expected clinical benefits.

PMD22

COST ANALYSES OF LUTONIX® 035 DCB PTA CATHETERS FOR THE TREATMENT OF FEMOROPOPLITEAL ARTERY STENOSIS: A U.S. HOSPITAL PERSPECTIVE

Delatore P[1], Hollmann S[2], Ferko N[2]
[1]*CR Bard Inc., Murray Hill, NJ, USA,* [2]*Cornerstone Research Group Inc., Burlington, ON, Canada*

OBJECTIVES: Peripheral artery disease affects 8-10 million U.S. adults and 50% involve femoropopliteal arteries. A novel treatment, the Lutonix®035 Drug Coated Balloon PTA catheter (DCB) is indicated for percutaneous transluminal angioplasty (PTA), after pre-dilatation, of de novo or restenotic lesions up to 150mm in length in native superficial femoral or popliteal arteries with reference vessel diameters of 4-6mm. These analyses estimated the potential cost impact of DCBs vs. current care. **METHODS:** These economic modeled analyses compared total costs with vs. without DCBs over one year in a real-world scenario treatment mix for femoropopliteal PAD; these analyses were not based upon head-to-head clinical comparisons. For the inpatient hospital perspective, DCBs were compared with PTA, bare metal stents (BMS), drug-eluting stents (DES), covered stents (CS), and atherectomy. For the outpatient perspective, DCBs plus short spot stents were compared with BMS, DES, CS, and atherectomy. Equal distribution of treatment options in a world with vs. without DCBs was assumed. Consumable device-related costs (based upon published costs, where available) associated with initial procedures and repeat procedures (i.e., estimated target lesion revascularizations (TLRs)) were included. Average device utilization was informed by RCTs and TLR risk was derived from a network meta-analysis. Alternative analyses, including incremental reimbursement for DCBs, or different utilization/comparator assumptions, were also evaluated. **RESULTS:** When including DCBs into the mix of treatments (1,000 patients) one-year cost-savings were estimated to be $74,735 and $104,688 for inpatient and outpatient hospital perspectives, respectively. Additionally, DCBs were predicted to be cost-saving in the majority of analyses vs. individual therapies (e.g., DCB vs. CS: -$2,202 to -$2,967 per patient). Alternative analyses assuming incremental reimbursement predicted that DCBs could provide even greater cost-savings under a Medicare payment scenario. **CONCLUSIONS:** These analyses suggest that DCBs may provide cost-savings from a hospital perspective when considering the full range of comparators.

PMD23

IMPACT OF SAMPLE COLLECTION METHOD FOR EGFR MUTATION TESTING: RESULTS OF BLOOD-BASED AND TISSUE-BASED COBASÂ® EGFR MUTATION TESTING IN THE TREATMENT OF LOCALLY ADVANCED OR METASTATIC NSCLC IN THE US

Poulios N[1], Hristova-Neeley D[2], Gavaghan M[2]
[1]*Roche Molecular Systems, Inc., Pleasanton, CA, USA,* [2]*GfK, Wayland, MA, USA*

OBJECTIVES: Sufficient tissue sample is not always available for EGFR mutation testing to direct treatment with tyrosine kinase inhibitors in NSCLC patients. We compared the impact of using the FDA-approved cobas® EGFR Mutation Test alone versus using blood-based cobas® EGFR Mutation Test as an alternative test for patients without adequate tissue sample in NSCLC patient treatment decision-making in the US. **METHODS:** A decision-tree model was developed to compare testing methodologies and resulting treatment pathways in a hypothetical NSCLC US population health plan with 5 million covered lives and a baseline EGFR mutation prevalence of 16%. Inputs were based on published literature and Medicare fee schedule reimbursement. Outcomes of the model included patients with test failures, average patient survival time, and budget impact. The combination of tissue and blood-based testing were examined in four different scenarios. **RESULTS:** Blood-based EGFR mutation testing is a more accessible method for identifying EGFR mutation status for patients without a tissue sample. More patients received